



US POSTAL SERVICE CASE STUDY

INTERNET COMMUNICATING THERMOSTATS



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Internet Communicating Thermostats

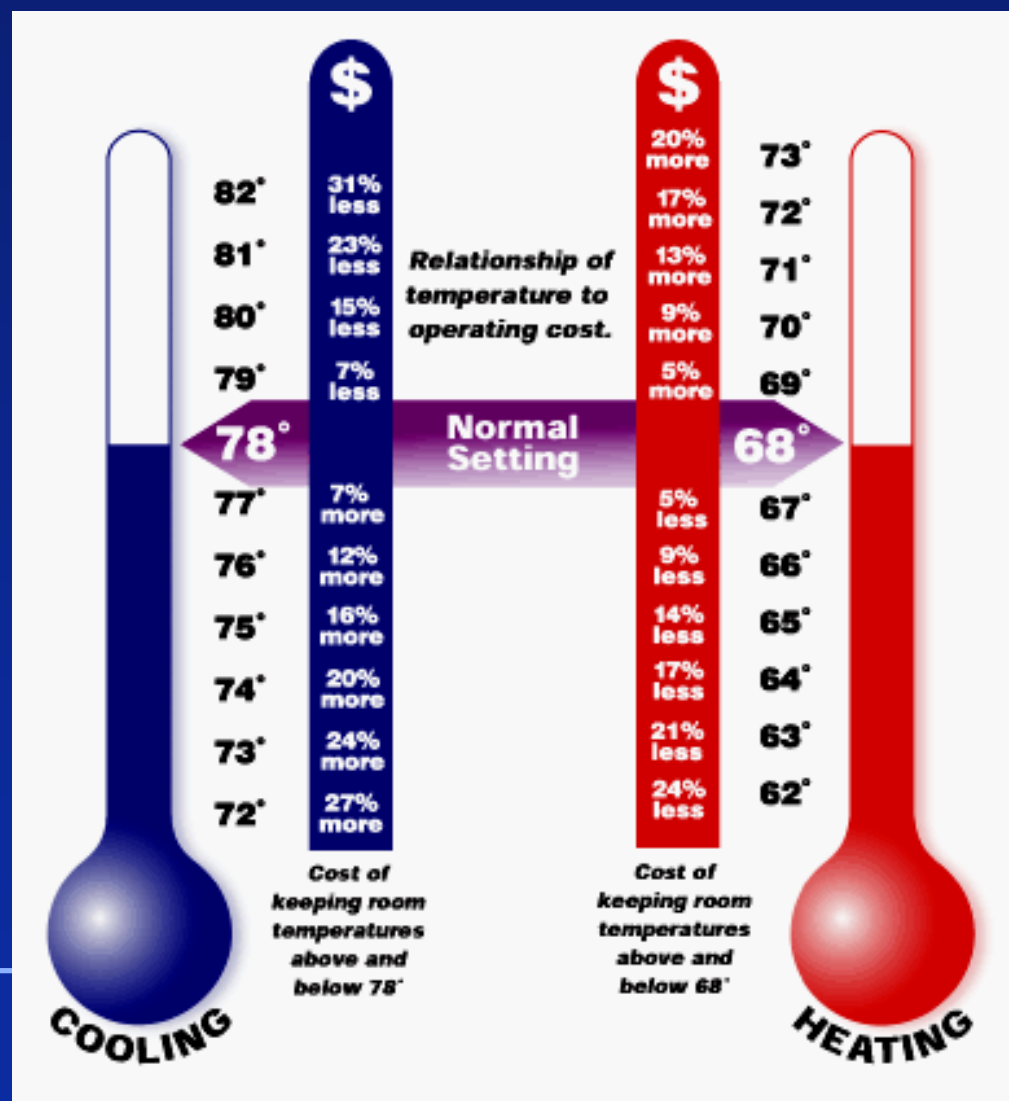
Overview

- ***Thermostat that can send and receive settings / status over the Internet***
 - ❑ ***Wired & installed like conventional thermostats***
 - ❑ ***Operates with or without communication***
 - ❑ ***Remote access to thermostats via Internet connections, open system protocols***
 - ❑ ***Easy access for local user override***





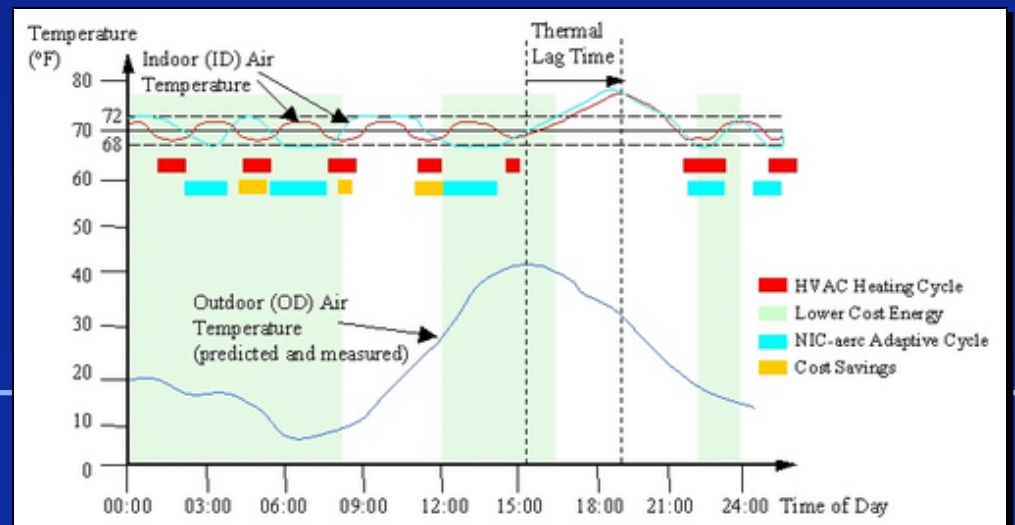
Thermostat setpoint affects energy savings





Information that can be collected remotely

- ❑ *Operating time of each unit*
- ❑ *Out of comfort-range alert and time*
- ❑ *Daily, weekly, monthly run hours*
 - *During occupied and unoccupied hours*
- ❑ *Local over-ride times & temperatures*

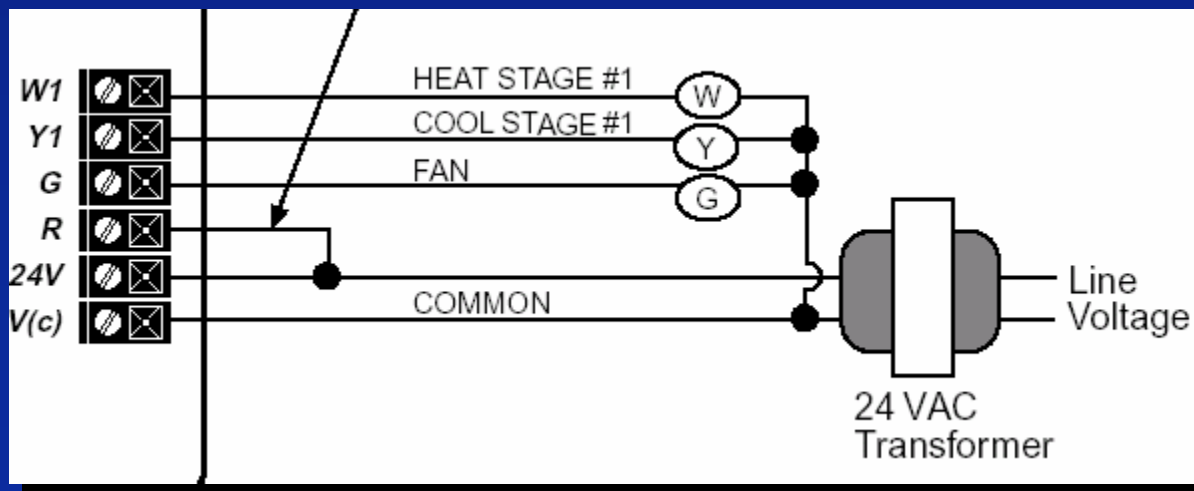




Internet Communicating Thermostat

Installs and works like a conventional thermostat

- ☐ ***no “learning curve”***
- ☐ ***intuitive without training***





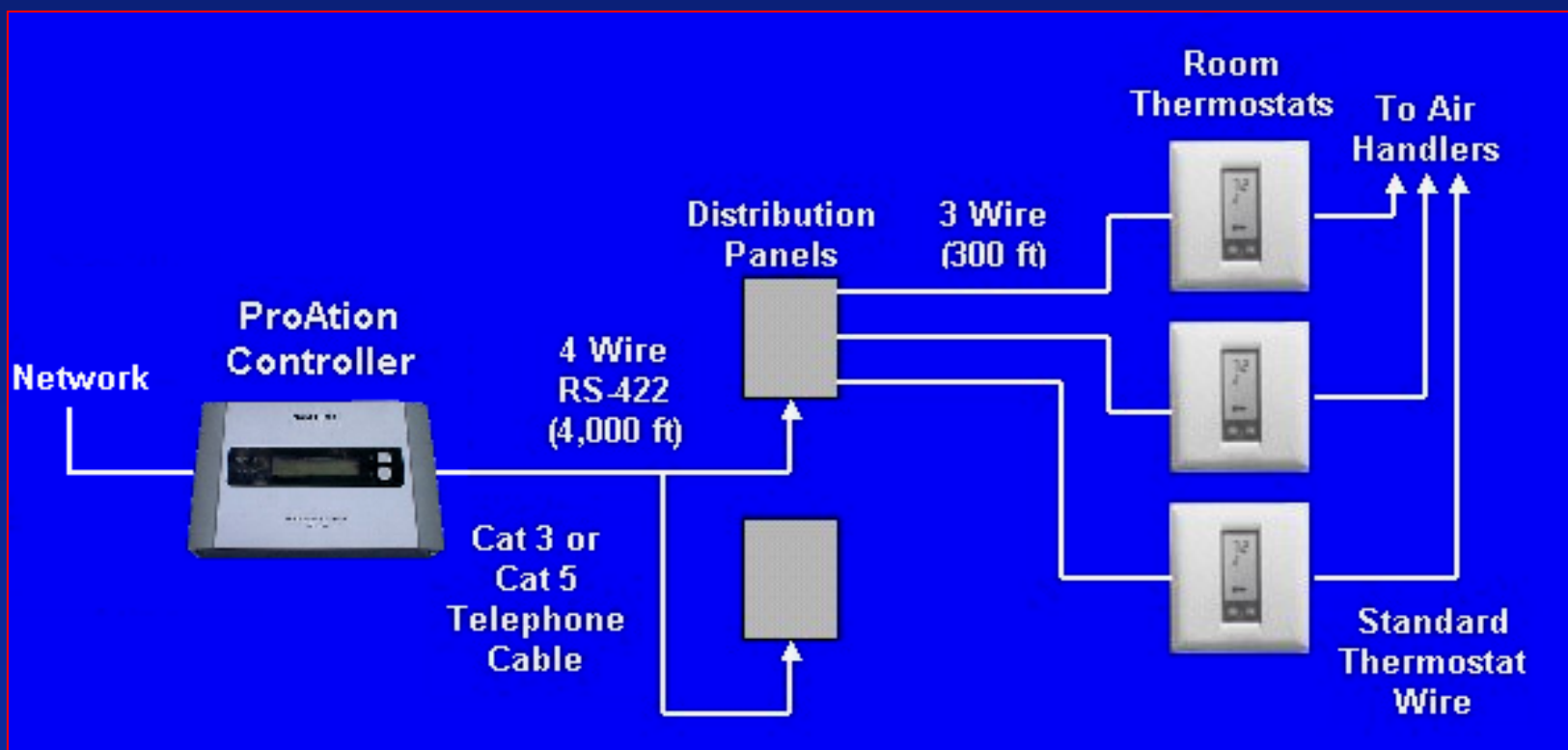
Internet Communicating Thermostats

Internet Connections

- ☐ *Controller communicates using CAT-3 or CAT-5 via standard interface*
- ☐ *Distribution panels connected to computer interface*
- ☐ *Each distribution panel connects up to 8 thermostats*
- ☐ *Each controller unit connects up to 4 panels (32 stats)*
- ☐ *Could also control lighting relays and other equipment on same schedule*



Internet Communication Connections





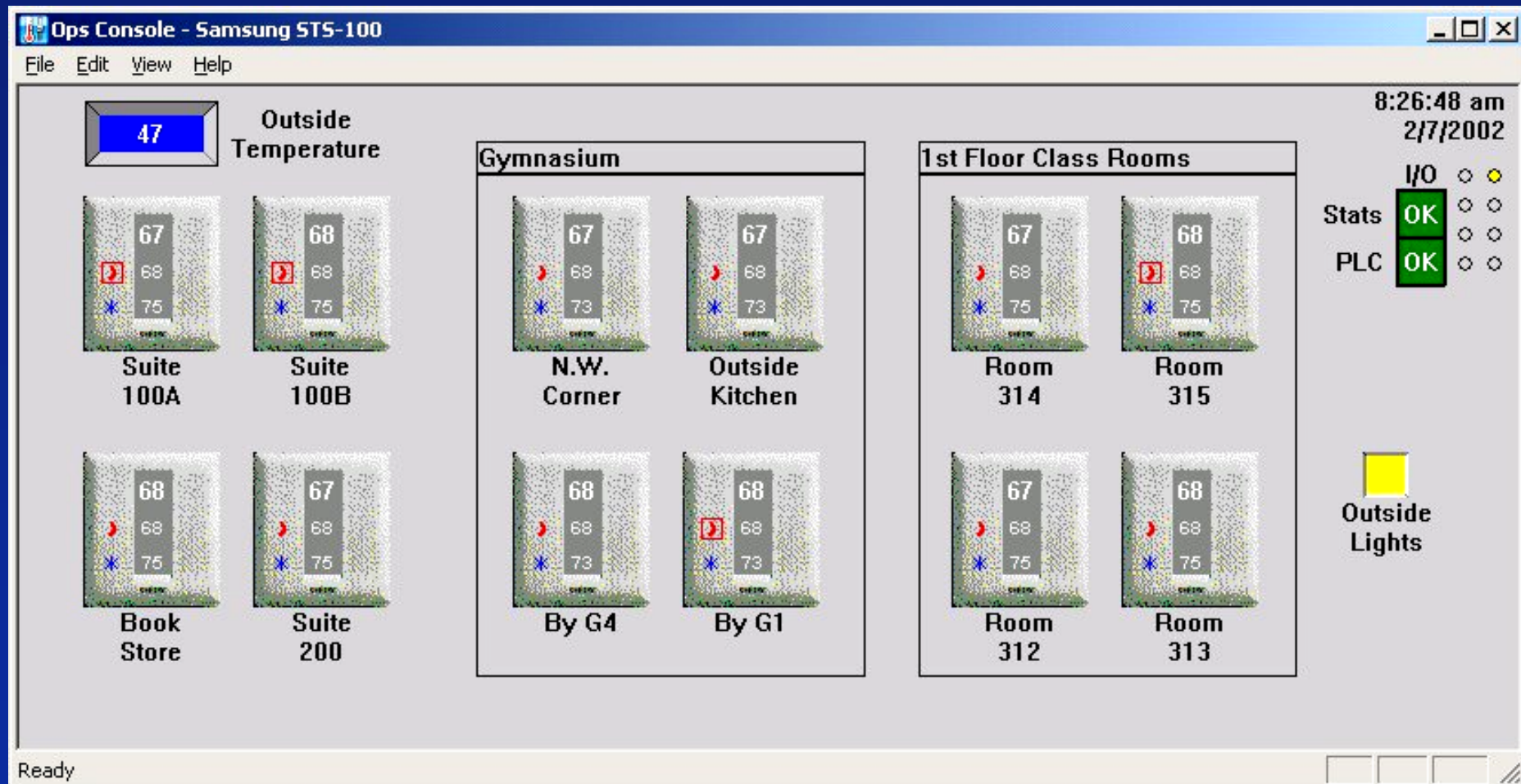
Adjustments that can be made remotely

- ☐ *Temperature set points*
- ☐ *Schedule times, days, holiday/weekend*
- ☐ *Local set point adjustment limits*
- ☐ *Heating, Cooling, or Auto*
- ☐ *Fan cycle or continuous*





Example Screen Display





Example Input Form

N.W. Corner [X]

Settings | Heat Schedule | Cool Schedule | Fan Schedule

Heat Set Point: 80 - 68 F

Cool Set Point: 100 - 73 F

Mode:
☐ Off
☐ Heat
☐ Cool
☒ Auto
☐ Emht

Fan:
☒ Auto
☐ On

Schedule Mode:
☒ Scheduled
☐ Comfort
☐ Economy
☐ Unoccupied

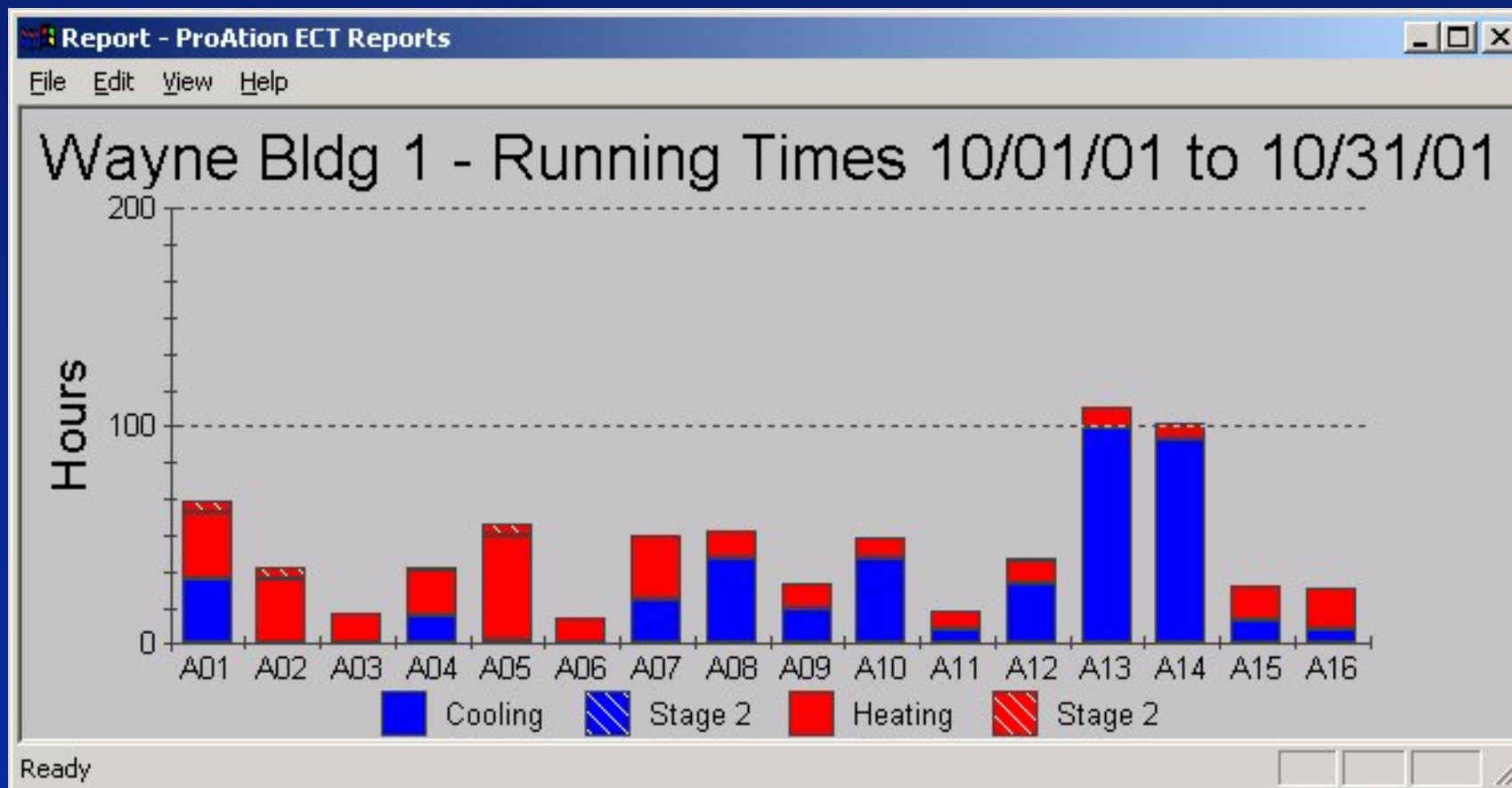
☐ User hold

Use Which Schedule?
☐ Use Individual Schedule
☒ Use Master Schedule
Gymnasium Standard [v]
Copy Master Schedule

OK Cancel

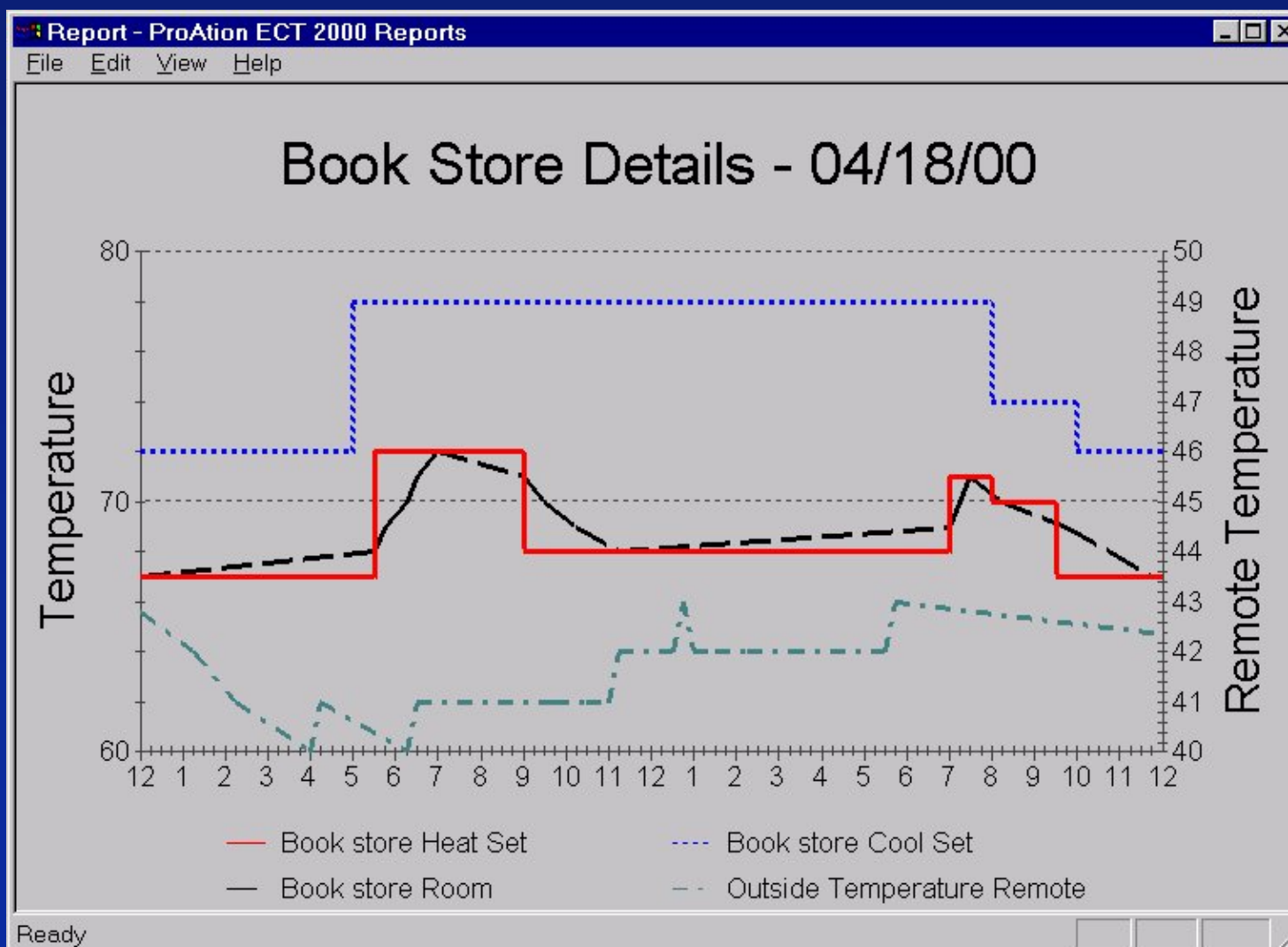


Example Air-Conditioner Run Hours





Track Temperatures and Local Setpoints





Internet Communicating Thermostats

Case Study

Five facilities

- *Installed cost per facility average \$2000*
- *Estimated savings: \$5,800 ~ \$8,400 per year*
- *Payback period: 1.5 to 2 years*
- *Installed by in-house technicians*
- *System is fairly simple and user friendly*



Case Study

Ops Console - ProAction ECT

File Edit View Help

U. S. Postal Service

1:28:46 PM
I/O
OK

Thermostat 1

72
69
71

Thermostat 2

74
69
71

Thermostat 3

73
72
76

Thermostat 4

75
74
76

Admin - ProAction ECT

1:28:45 PM
I/O Status
A **OK**

Site Location

OK

Holidays

OK

View Log

OK

I/O Settings

OK

Passwords

OK

Lock Buttons

OK

Configure Thermostats

Thermostat type: All other thermostats

of zones: 2

Zone 1 | Zone 2

Stat type: RCS TX10-B

House code: J

Setback temp:
Heat: 65
Cool: 85

Automatic status reading:
☒ Enable automatic reading
Rate (minutes): 1

OK **Cancel**

Ready

Start | Ops Console - Pr... | Admin - ProA... | Log | untitled - Paint | 1:26 AM



Internet Communicating Thermostats

Evaluations-Pros/Cons

- ☐ *Power outages knocking out system & clock settings*
- ☐ *Several far away sites can be controlled very easily from one location*
- ☐ *Less costly to install than a full DDC* system*
- ☐ *Only 2 out 5 sites actually saved energy*
 - ✓ *US Postal service unique*

* DDC – Direct Digital Control



INTERNET COMMUNICATING THERMOSTATS

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Thank You!
